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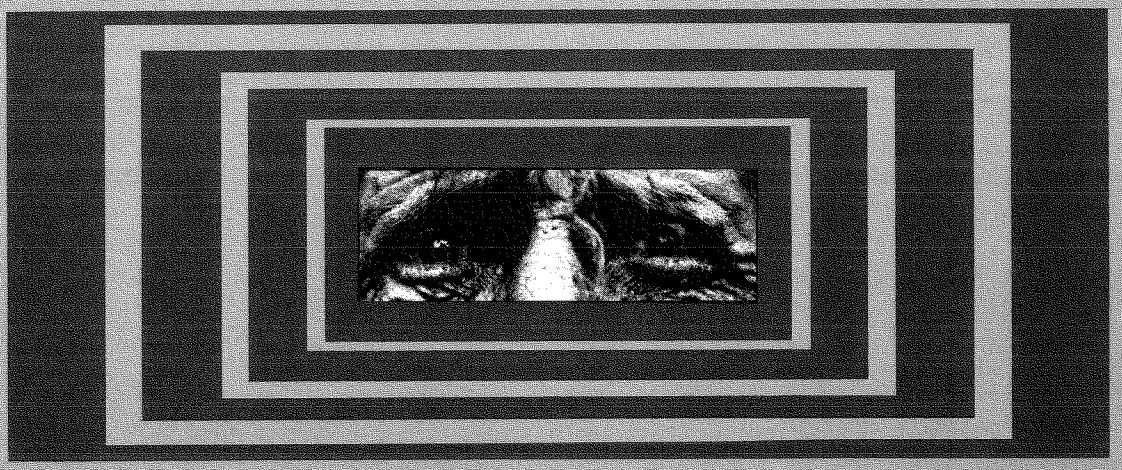
# ECONOMIC REVIEW



# ASPECTS OF INFLATION

SPRING 1980

# Aspects of Inflation

Inflation has become perhaps the most serious problem affecting the industrial world over the past decade or more, and thus it has also become the most important topic of research for the world's economists. For example, roughly half of all the issues of the *Economic Review* during the past half-decade have concerned various aspects of the inflation problem. This issue contains several articles on the subject, as the search continues for viable solutions to this severe and long-continuing problem. These articles explore such questions as the relationship between monetary disturbances and exchange rates, the factors determining the lagged relation between money and prices, and the influence of cost-push and government-spending pressures on money-supply growth and inflation.

Michael Keran and Stephen Zeldes, in the first article, investigate the link which exists between money and exchange rates through the goods and asset markets. Most analysts agree that the fundamental influence on the exchange rate is the need to maintain "purchasing power parity"—the parity of national price levels between countries. Because national price levels change slowly over time, it could be assumed that exchange rates also would change slowly over time. But exchange rates have shown much greater variance than underlying price levels since 1973, so that analysts have come to question the validity of the purchasing-power-parity approach to exchange-rate determination.

Keran and Zeldes therefore find it necessary to develop an alternative model to explain short-run exchange-rate movements—one which links monetary disturbances to short-run adjustments in the bond market. In their analysis, they argue that the exchange rate in the long run is determined solely by purchasing-power-parity considerations, while long-run interest-rate differentials across countries reflect differences in inflation expectations. In contrast, short-run exchange-rate movements depend on assumptions about 1) adjustments of various markets and 2) expectations concerning the path of future money growth.

To test their model, Keran and Zeldes utilize four sets of equations which compare the U.S. bilaterally with five other major countries. On the basis of those tests, they conclude that the inflation differential is significantly affected, with long lags, by the growth in the "excess" money supply in the U.S. relative to each of the other countries—and that the exchange rate is similarly affected, although with much shorter lags. They find also that long-term interest-rate differentials are significantly related to the relationship between U.S. and foreign excess-money growth rates. On the other hand, short-term interest rates are influenced by both a liquidity effect and an inflation-expectation effect of a change in excess money.

Charles Pigott, in a second article, examines the lag between money and prices, and the way that that lag is affected by expectations about monetary policy. Until fairly recently, most lags in economic behavior were regarded as mechanistically determined by institutional rigidities, adjustment costs, and other factors which supposedly do not vary with government policies. Empirical relations derived from past data were commonly used to simulate the effects of policy changes, and also to predict economic conditions under policy regimes very different from those prevailing in the sample period. But as Pigott notes, with the accelerating inflation of recent decades, relations that used to be regarded as stable have shifted, often dramatically.

Consequently, he concludes that expectations about future economic conditions, including monetary policies, crucially influence

the lags in economic relations—and that these expectations become more quickly adapted to changing conditions than once was thought. In his analysis, he considers the lags in a relation which is crucial for forecasting and policy analysis—the relation between inflation and current and past money growth.

Pigott argues that the lag in money's effect upon prices can be substantially affected by individuals' expectations about future money growth. This implies that money-inflation forecasting relations will change, at least eventually, when government policy alters the relation between current (and past) money growth and future money growth—as he finds in measuring the experience of several industrial countries. In fact, the long-run impact of money on prices implied by this relation appears to have shifted substantially between the fixed rate period of the 1960's and the floating-rate period of the 1970's. Further, he argues that prices will react more to money changes perceived as permanent than to transient changes. If true, this could provide at least a rough indication of how inflation-forecasting relations can be adapted to altered policies.

Michael Bazdarich, in a final paper, examines the causality of U.S. inflation over the past two decades. Most economists, in his view, would agree that nonmonetary factors can have a sustained effect on the inflation rate only if they are accommodated or "validated" by increases in the money supply. Thus, the debate on the causes of inflation and the proper anti-inflation policy revolves around the issue: what factors have typically caused movements in the rate of money-supply growth?

Bazdarich develops his argument by conducting tests of cost-push and government-spending theories of inflation. According to the cost-push approach, central banks are forced to expand money and credit in response to large cost increases in various industries, in order to avoid the output losses and unemployment that would normally follow such phenomena. According to the government-spending argument, central banks must monetize large government deficits in order to avoid such alternative financing approaches as tax increases or government-debt issues (with rising interest rates). Bazdarich applies the Granger causality-test technique to determine whether these several "causes" of inflation have systematically caused, or been caused by, money-supply growth. The results provide evidence regarding the causal relationship between the individual variables and recent U.S. inflation.

Bazdarich tested seventeen indicators of cost-push or "supply shock" pressures with respect to four measures of the money supply, but found virtually no evidence of monetary accommodation. In the vast majority of cases, the results indicate "one-way causality" from several or all of the money-supply measures to the respective price or cost indicator. The results were less conclusive for government spending or deficit measures. But although some of the latter indicators displayed causal effects on the money supply, the results were either unsatisfactory in some way or were subject to conceptual problems involving the forms of the equations. Additionally, in examining the 1974-75 and 1978-79 inflationary episodes, he found that previous and/or concurrent money-supply growth provided a reasonable explanation of most of the inflation in each case.